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The slope from the bottom of Death Gulch from the mouth upward is very great, affording a hard climb for any who may attempt to pass up it. Occasionally, shelves are encountered adding to the difficulty of reaching the place where the animals are found. It is above one of these shelves or steps where all of the carcasses were lying, and the floor of the gulch at this place is comparatively level for a distance of twenty feet or more. At the upper end of this space and about four feet up the side is the fissure described. You may see this offers a fine opportunity for the accumulation of gas.

Thinking of the preservative effects of the gas, I believed at first the bear discovered by 'Pvt. Wilson' was the one I found the following June but later learned that the former was a large bear from which the claws had been taken by the soldiers, while the latter was a small bear still retaining its claws.

Water flowing in the upper part of the gulch has a distinct acid reaction. One determination showed the acidity calculated to sulphuric acid to be equal to one third of a gram to the liter. This acidity disappears before the lower part of the gulch is reached, a sample half way down from the top giving a neutral reaction.

The production of gas is probably connected with this neutralization of the acid water. The action of the acid on carbonates and sulphides liberates the gases.

The symptoms experienced by members of our party while in the gulch were not those of asphyxiation, the usual result of the action of carbon dioxide, but while no two were affected exactly alike, dizziness was noted in each case. In addition to dizziness one had nausea, another headache and the third was dizzy but noticed no other effect.

Taken altogether, the phenomena of this region are most interesting and deserve further study. In taking samples of the gas it was necessary to watch the flow of acidulated water containing cadmium sulphate, in which the sulphureted hydrogen was collected, to see that none of the precipitated cadmium sulphide was siphoned off.

Bending over watching this intently I was

almost overcome by the gas, and but for the assistance of my friends in getting to fresh air I should have remained with 'Wahb' and his brethren at the bottom of Death Gulch.

F. W. TRAPHAGEN.

MONTANA STATE COLLEGE,  
BOZEMAN, MONTANA.

#### A LOACH FROM NANAIMO.

THROUGH the kindness of Mr. Jaeger, of Brannan St., San Francisco, Stanford University has received a live specimen of a very mysterious fish. It is a loach, an eel-shaped fish with the head of a sucker and the beards of a cat-fish, a group of fishes abundant in the Old World in the brooks from Ireland to Japan, but never before found in America.

The loaches are very hardy, as much so as a salamander, and they sometimes come out into the wet grass in search of insects.

This loach was brought to San Francisco in a coaling ship from Nanaimo. He was said to have been found in a puddle in the coal-bank. He was put into a tumbler of water at San Francisco, and then revived. When I found him he was still in the glass of water and lively enough, the bottom of the glass being covered with coal dust.

His origin is a puzzle. Some patriotic Englishman might have brought a loach to Nanaimo. Some Chinaman may have carried about a live loach as good medicine. Some Japanese may have had him in his little tray-garden. It is not easy to conceive that this family should be native to America and that we should have overlooked it so long, while describing so many Asiatic and European species.

This loach has six barbels, short dorsal, a rounded caudal. It can not, therefore, belong to any one of the three European genera. Its place is in the genus *Orthrias*, lately framed by the writer for a species from northern Japan. But the new loach is not this species, nor does any one of the few Chinese species of *Orthrias*, of which I find accounts, resemble it very much.

This is clear. The loach from Nanaimo belongs to a new or rare species. It is either native to Vancouver Island or else it has been brought over alive from China. Meanwhile

the type cheerfully lives in the aquarium, feeding on mosquito larvæ and little tadpoles. Who will find a second specimen?

DAVID STARR JORDAN.

#### QUOTATIONS.

##### THE DEPARTMENT OF AGRICULTURE.

THERE is grumbling all the time on account of the continually increasing demands of the Department of Agriculture. For the fiscal year 1897-98 its appropriation was \$3,182,902. For the current year the appropriation is \$5,478,160, and the department will cost \$6,229,880 next year.

Although the amount spent by the department is large, other countries are expending proportionately more each year for the same purposes. The latest obtainable figures, as given in a recent report from the senate committee on agriculture and forestry, show these to be the appropriations of several foreign countries for the encouragement of agriculture:

|               |              |
|---------------|--------------|
| France .....  | \$ 9,020,000 |
| Austria ..... | 9,275,000    |
| Hungary ..... | 9,400,000    |
| Russia .....  | 25,280,000   |
| Japan .....   | 3,750,000    |

In order that these figures may mean something, the committee has calculated the amount spent by each nation, including the United States, for each acre of tillable land and for each person in the agricultural population. These figures are:

##### EXPENDITURE PER ACRE OF AGRICULTURAL LAND.

|                      | Cents. |
|----------------------|--------|
| France .....         | 9.8    |
| Austria .....        | 13.3   |
| Hungary .....        | 12.4   |
| Russia (about) ..... | 4      |
| United States .....  | 1.3    |

##### EXPENDITURE PER CAPITA OF AGRICULTURAL POPULATION.

|                     | Cents. |
|---------------------|--------|
| France .....        | 52     |
| Austria .....       | 69     |
| Hungary .....       | 90     |
| United States ..... | 35     |

Russia, with an area of 8,660,395 square miles, maintains 102 experiment stations, or one to every 84,906 square miles. The United States, with 3,692,125 square miles, has sixty

experiment stations, or one to every 61,535 square miles. The other extreme is reached with Belgium, where, in a country containing 11,373 square miles, fifteen experiment stations, or one to every 758 square miles of territory, are maintained. Germany and France maintain a station for every 3,000 square miles of their territory, roughly. In no section of the United States are there as many stations in proportion to the land surface as there are in Germany and France. In the states on the Atlantic seaboard there is one station to every 24,000 square miles of land. Texas, with one federal experiment station, is 27 per cent. larger than all of France and Germany, with their 151 stations. The ratio of experiment stations to area in France and Germany is 96 to 1 as compared with Texas, 28 to 1 as compared with Minnesota and the Dakotas, and 39 to 1 as compared with our Pacific states.

The quarrel that the public has with the Department of Agriculture does not hinge on the amount of its annual appropriation. There has never been any disposition to treat it in a niggardly fashion, but the impression is general that great sums of money are wasted on frivolous enterprises.

The free distribution of seeds is the most notorious of the improper expenditures of which the system is guilty, and the amount of money involved in this is about the same as the annual increase in the appropriation granted by congress. The Weather Bureau, which costs the department \$1,330,000 a year, is pretty generally laughed at now.

If the department devotes itself to its legitimate business, and accomplishes its functions properly, it will not be hampered by any lack of funds.—The N. Y. Sun.

#### JAMES HYATT.

DR. JAMES HYATT died at Bangall, N. Y., on February 27, in the eighty-seventh year of his age. He was one of the earliest members of the American Association for the Advancement of Science, also a member of the New York Lyceum of Natural History, now the Academy of Sciences, and one of the founders of the Torrey Botanical Club. With him